

Alliance Environmental Group, Inc.



100 Jefferson Boulevard, Warwick, Rhode Island 02888 Telephone: 401.732.7600; Fax: 401.732.7670

January 7, 2008

Mr. Donald Squires
Emergency Response Division
Rhode Island Department of Environmental Management (RIDEM)
235 Promenade Street
Providence, RI 02908

RE: Test Pit Investigation Results
Former Mill Property
1 Carrington Street
Lincoln, RI

Dear Mr. Squires:

Alliance Environmental Group, Inc. (AEG) on behalf of the owner of the abovementioned property (hereinafter, "Site"), FDS Industries, has completed the following letter report summarizing the of results of a test pit investigation completed at the Site on May 22, 2007.

On the above date, AEG oversaw and directed the advancement of seven test pits (TP-101 through TP-107) using an excavator by Modern Tractor & Truck Service, Inc. of Seekonk, MA. The test pits were completed in an effort to identify if petroleum impact investigated and remediated on the adjoining property to the north extended onto the Site. In addition, if impact was found, the investigation was to define the boundaries of the release.

In summary, subsurface conditions observed at the each test pit generally consisted of the following. At test pits TP-102, TP-103, and TP-104 a former concrete footprint was penetrated at grade while the remaining test pits were advanced through soil. Nevertheless, between surface grade and approximately 3 feet below surface grade (BSG) fill was encountered in the form of bricks, ash, and other miscellaneous debris. Between approximately 3 and 7 feet BSG a medium to coarse sand with coarse gravel was observed within which groundwater was encountered between 6 and 9 feet BSG. Upon reaching the groundwater table at TP-101, TP-102, TP-104, TP-105, and TP-107 evidence of petroleum impact was observed within soils and non-aqueous phase liquid (NAPL) was observed on the groundwater within the excavation. However, at TP-103 and TP-106 evidence of petroleum impact was not observed within the vadose zone or within the groundwater table. Logs describing in detail the observations made during the completion of each test pit have been provided in Appendix A. Additionally, a plan depicting general Site conditions and test pit locations has been attached as Figure 1.

As a result, samples collected from the capillary fringe at TP-103 and TP-106 were submitted to a Rhode Island certified laboratory for analysis of total petroleum hydrocarbon (TPH) via EPA method 8100M.

Results of the laboratory analysis indicate TPH concentrations of 65.0 mg/Kg and 350 mg/Kg at TP-103 and TP-106, respectively. These concentrations are well below the applicable RIDEM GA Groundwater Leachability Criteria (GA-LC) of 500 mg/Kg. Furthermore, soils collected from B-107/MW-104 (proximal to TP-106) in December of 2005 from the capillary fringe displayed a TPH level of 333 mg/Kg. A copy of the laboratory analytical report has been attached as Appendix B.

Following completion of the of the investigation, AEG determined the general extents of impact extend to the north along the Site property line, to the south along a line between TP-103 and TP-106, to the east across TP-107 and potentially along the river wall based upon the proximity, and finally to the west beyond TP-105. A depiction of the approximate extents of impact has been provided on Figure 1. Due to Site-specific constraints including a steep slope and inability to penetrate the concrete slab associated with the former boiler room, a portion of the impacted area surrounding TP-104 and TP-105 was interpolated. However, based upon local groundwater flow direction to the east toward the Blackstone River and observations from test pits in the downgradient path, the lines drawn in the area of TP-104 and TP-105 are likely accurate.

Due to the proximity of the release to the Blackstone River and the evidence of free mobile product in the subsurface, RIDEM is requiring a comprehensive response action to remove the impacted soil from the subsurface in an effort to prevent further migration toward the river.

Accordingly, AEG is proposing that impacted soils within the area defined on Figure 1, be removed to remediate the Site. As part of this scope, AEG is proposing the following be completed:

- 1. Miscellaneous debris piled in the southeast corner of the former boiler room will be removed and disposed at a licensed facility to allow space for future equipment and potential material storage.
- 2. Demolition of the concentrate slab associated with the former boiler room and demolition of the small vacant building along the Blackstone River. These tasks will allow for sufficient access needed to remove the impacted soils
- 3. Once tasks 1 and 2 are complete, AEG proposes excavation of all soils within the approximate area of petroleum impact defined on Figure 1. Consequently, AEG anticipates that in some areas the top 5 to 6 feet BSG of non petroleum impacted soil will be excavated and stored on-Site for eventual use as backfill.
- 4. Based upon the impact being centered within the capillary fringe, AEG is planning on conducting dewatering of soils to remove floating product and allow for proper transport and disposal. As part of the dewatering process, AEG will install a floating weir skimmer within the excavation. The skimmer will be fitted

with a vacuum line that will be drawn to an oil/water separator and carbon treatment system. Once treated, the water will then be discharged back into the river.

- 5. Once the above tasks have been completed and/or actively implemented, AEG will oversee and direct the removal of impacted soils. During cleanup efforts, extensive documentation will be completed including but not limited to confirmation sampling for TPH and cataloging of the impact extents. Soils will be removed and cleanup efforts will be compared to the RIDEM GA-LC for TPH of 500 mg/Kg. Additionally, once excavation has been completed, the non-petroleum impacted soils removed prior, will be used as backfill. Any additional material for grading the area will be imported clean backfill.
- 6. Note, prior to commencing the above activities permits will most likely be required. Firstly, due to the planned excavation being within 200 feet of a river bank a wetlands permit may be required. Furthermore, as part of the dewatering process, treated water is to be discharged into the river. Accordingly, a Rhode Island Pollutant Discharge Elimination System (RIPDES) permit may also be required. Whether the permits are required or not, AEG will complete the above work following best management practices insuring that all OSHA relegations are followed and sedimentation barriers implemented. In addition, although this plan does not include shoring of the stone wall along the river, AEG does acknowledge the potential for this activity in the possible form of sheet piling.

Upon your review please contact the undersigned with any questions or concerns at 401-732-7600.

Very truly yours,

Alliance Environmental Group, Inc.

Jacof M. Bull for RCH

Richard C. Hittinger

President

Jacob H. Butterworth Environmental Scientist

Attachments:

Appendix A Test Pit Logs

Appendix B Soil Analytical Report

Figure 1 Site Plan

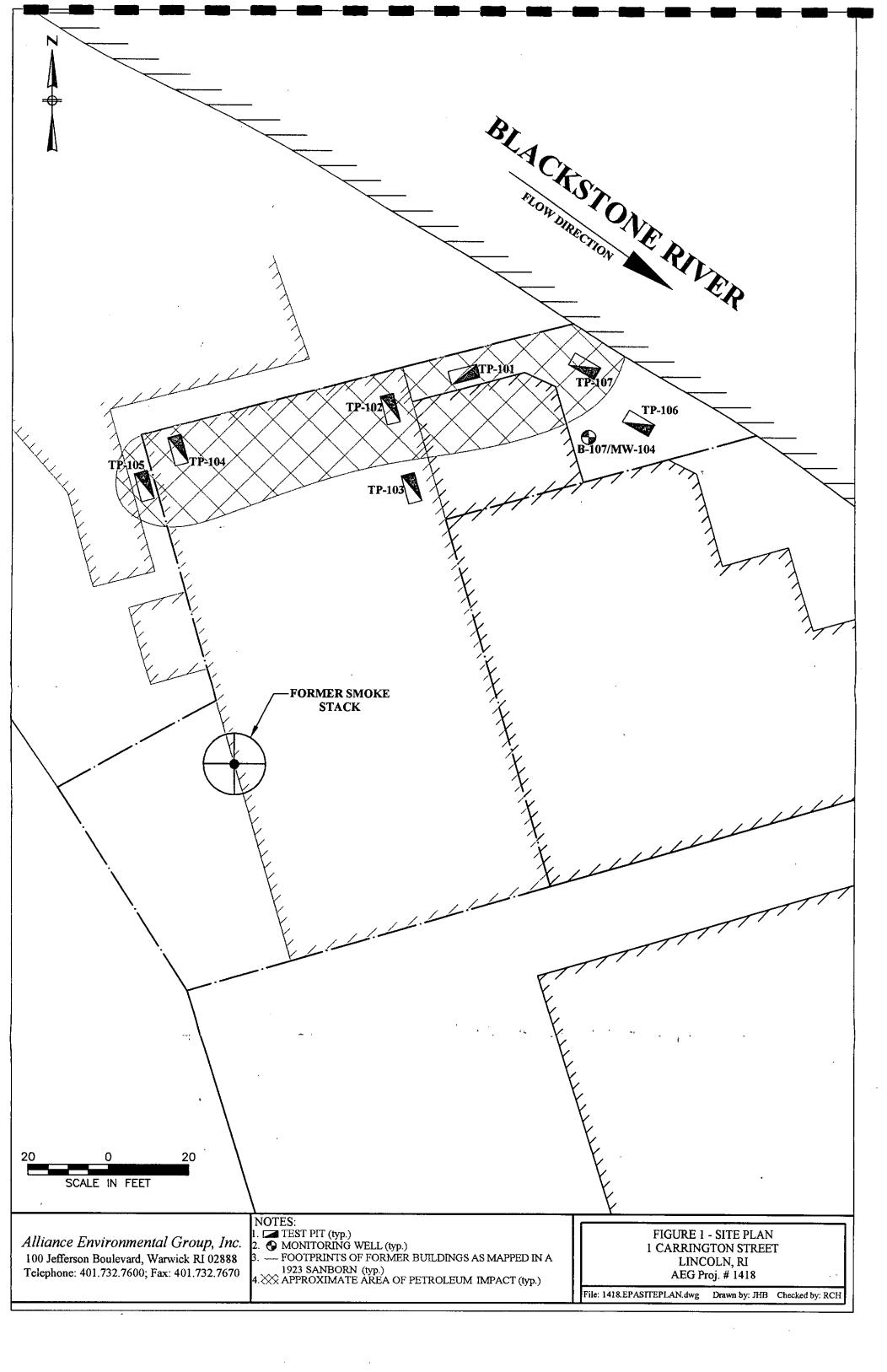
cc: Bill Walker, FDS Industries

Mr. Frank Gardner, United States Environmental Protection Agency (USEPA) Stephanie A. Wilkes, RIDEM Office of Waste Management



Figure 1

Site Plan



Appendix A

Test Pit Logs

Allian	ice Enviro	nmental	Group; Inc.	TES	T-PII	LOG					
PROJ	ECT:	1418 - 1 Carr	ington Street, Lincoln, RI	TEST PIT NO.	TP-10	1					
LOCA	ATION:	Along Aband	oned Building	PAGE 1 OF	1						
CON	TRACTOR:	Modern Trac	tor and Truck	DATE STARTED:	5.22.0	7					
EQUI	IPMENT:	Backhoe	<u> </u>	DATE FINISHED:	5.22/0	22/07					
OPER	RATOR:										
INSP	ECTED BY:										
OBS	UNDWATE!										
DEPTH	S.CAFE										
(ft)	STRATA CHANGE	SOIL TYPE	SAMPLE ID	HNU (ppm) 10.2 eV lamp							
1.0											
			and glass	ials observed in the form of brid	,,,						
2.0											
3.0		1941 (1995-1997) 1941 (1995-1997)	21 (1.6 + 3.4 + 1)								
4.0			3' - 6', Sand: Medium to co	arse tan sand and gravel							
5.0											
							<u> </u>				
6.0			6' - 8', Same as above, petro	olaum immaat ahnamad		TD 101 (71)	374				
7.0		A Land	o - 6, Same as above, pent	neum impact observed		TP-101 (7')	NA NA				
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10.0											
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PROJECT: 14	2	and the second s										
	-	rmer Boiler Room	PAGE 1 OF	1								
CONTRACTOR: M	Iodern Tract	or and Truck	DATE STARTED:	5.22.0	07							
EQUIPMENT: B	ackhoe		DATE FINISHED:	5.22/0								
OPERATOR: B	lobby Junior		SURFACE ELEVATION:	NA								
INSPECTED BY: Ja			-									
GROUNDWATER OBSERVATIONS DEPTH: 9' STABILIZATION TIME: NA SAMPLE DATA SAMPLE DAT												
DEPTH STRATA	PTH STRATA SOUTHWEET LITTING CON (Daniel Strata)											
1.0 2.0 3.0 4.0 5.0 6.0 7.0 8.0 9.0 11.0 12.0 13.0 14.0 15.0 16.0 17.0 18.0 19.0 20.0		Surface: Top Soil 0 - 4', Fill: Urban fill mater and glass 4' - 9', Sand: Medium to co	roleum impact observed	ck, ash,								
GENERAL REMAR NA: Not Analy			Soil Legend	Fill Sand/ Silt	Gravel							

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Alliar	nce Envir	nmental	Group, Inc.	TES	TRI	rLog .			
PRO.	JECT:	1418 - 1 Carr	ington Street, Lincoln, RI	TEST PIT NO.	TP-10	3			
roc	ATION:	In Area of Fo	ormer Boiler Room	PAGE 1 OF	1				
CON	TRACTOR:	Modern Trac	tor and Truck	DATE STARTED:	5.22.07				
EQU	IPMENT:	Backhoe		DATE FINISHED:	5.22/0	7			
OPE	RATOR:	NA							
INSF	PECTED BY:								
OBS	DUNDWATE		-						
DEPTH	STRATA		103914888859						
(ft)	CHANGE	SOIL TYPE	SAMPLE ID	HNU (ppm) 10.2 eV lamp					
			Surface: Concrete Slab	ials observed in the form of brid					
1.0									
2.0			and glass						
3.0			2' - 8', Sand: Fine to medium	m tan sand and gravel					
4.0									
5.0		40							
6.0									
7.0									
	\subset								
8.0			8' - 10', Sand: Medium to co	correction and and annual		TD 102 (05)	274		
9.0	_	State of the state	o - 10, Sand. Medium to d	oarse ian sand and gravei		TP-103 (9')	NA		
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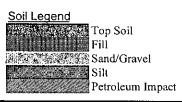
Alliance Envir	onmental Group, Inc.	TES	T PIT LOG
PROJECT:	1418 - 1 Carrington Street, Lincoln, RI	TEST PIT NO.	TP-104
LOCATION:	In Area of Former Boiler Room	PAGE 1 OF	1
CONTRACTOR:	Modern Tractor and Truck	DATE STARTED:	5.22.07
EQUIPMENT:	Backhoe	DATE FINISHED:	5.22/07
OPERATOR:	Bobby Junior	SURFACE ELEVATION:	NA
INSPECTED BY:	Jacob H. Butterworth		

GROUNDWATER **OBSERVATIONS**

DEPTH: NA STABILIZATION TIME: NA

S. Madik I	- 16 A 34	erar bet er	SAMPLEDATA		
DEPTH (ft)	STRATA CHANGE	SOIL TYPE	LITHOLOGY (Description of Materials)	SAMPLE ID	HNU (ppm) 10.2 eV lamp
			Surface: Concrete Slab		
1.0			0 - 2', Fill: Urban fill materials observed in the form of brick, ash,		
2.0			and glass		
2.0					
3.0			2' - 6', Sand: Medium to coarse tan sand and gravel with oil impact		
3.0			2 - 0, Sand. Medium to coarse tan sand and graver with on impact		
4.0					
			Further excavation could not occur due to subsurface obstructions		
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GENERAL REMARKS: NA: Not Analyzed



Alliance E	nviro	onmental Group, Inc.	TES	T)PITLOG
PROJECT:		1418 - 1 Carrington Street, Lincoln, RI	TEST PIT NO.	TP-105
LOCATION	N:	West of Former Boiler Room	PAGE 1 OF	1
CONTRAC	CTOR:	Modern Tractor and Truck	DATE STARTED:	5.22.07
EQUIPME	NT:	Backhoe	DATE FINISHED:	5.22/07
OPERATO	R:	Bobby Junior	SURFACE ELEVATION:	NA
INSPECTE	D BY:	Jacob H. Butterworth		

GROUNDWATER OBSERVATIONS

DEPTH: NA STABILIZATION TIME: NA

4克基底	HALL WAR	A STARTERS	SAMPLE DATA	The section of the	148 - 15 TEUROS 1
DEPTH (ft)	STRATA CHANGE	SOIL TYPE	LITHOLOGY (Description of Materials)	SAMPLE ID	HNU (ppm) 10.2 eV lamp
			Surface: Top Soil		
1.0			0 - 2', Fill: Urban fill materials observed in the form of brick, ash,		
			and glass		
2.0					
2.0					
3.0			2' - 6', Sand: Medium to coarse tan sand and gravel with oil impact		
4.0					
4.0			Further excavation could not occur due to subsurface obstructions		
5.0			r armer excavation could not occur due to subsurface obstructions		
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20.0					

GENERAL REMARKS: NA: Not Analyzed Soil Legend
Top Soil
Fill
Sand/Gravel
Silt
Petroleum Impact

Allian	ce Envir	onmental	Group; Inc.	TES	T PIT	LOG	The same of the sa				
PROJ	JECT:	1418 - 1 Carr	ington Street, Lincoln, RI	TEST PIT NO.	TP-106						
LOCA		Along Blacks		PAGE 1 OF	1						
CON	TRACTOR:	Modern Trac	tor and Truck	DATE STARTED:							
EQUI	IPMENT:	Backhoe		DATE FINISHED:	5.22/07	1					
OPE	RATOR:	Bobby Junior	·	SURFACE ELEVATION:	NA						
INSP	ECTED BY:										
	UNDWATE ERVATION										
DEPTH	STEP A T	and a second									
(ft)	STRATA CHANGE	SOIL TYPE	LITHOLOGY	SAMPLE ID	HNU (ppm) 10.2 eV lamp						
1.0	-		ek ach								
			and glass	als observed in the form of brid	, asii,						
2.0			2' - 7', Sand: Medium to coa	arse tan sand	-		· · · · · · · · · · · · · · · · · · ·				
3.0					-						
4.0											
5.0											
6.0											
					-						
7.0	<u> </u>		7' - 10', Sand: Medium to co	parse tan sand and gravel	-						
8.0	$\overline{}$, 10, Said. Medium to e	sarse tair saile and graver							
9.0	_	May to May			ŀ	TP-106 (9')	NA				
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		FROM LEAST STREET			. [<u> </u>				
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			Group, Inc.	TES	TPI	ILOG	報名/ 安置 称在 3000年第155日,						
1			ington Street, Lincoln, RI	TEST PIT NO.	<u>TP-10</u>	<u> </u>							
		Along Blacks		PAGE 1 OF	1								
			tor and Truck	DATE STARTED:	5.22.07								
1		Backhoe Bobby Junio		DATE FINISHED:	5.22/0	7							
	ECTED BY:			SURFACE ELEVATION:	NA								
	OUNDWATE ERVATIONS		8' STABILIZATION	TIME: NA									
A. A.A.													
DEPTH (ft)	STRATA CHANGE	SOIL TYPE	LITHOLOGY	SAMPLE ID	HNU (ppm) 10.2 eV lamp								
			Surface: Top Soil										
1.0			0 - 2', Fill: Urban fill materi and glass	-									
2.0			2' - 7', Sand: Medium to cor	area ton cond									
3.0			2 7, Sand, Medium to co.	arse tan sang									
4.0													
5.0													
6.0		Y.											
7.0			7' - 10', Sand: Medium to co	oarse tan sand and gravel with									
8.0	<u></u>		petroleum impact at 8'	_									
9.0						TP-107 (9')	NA						
10.0													
11.0													
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Appendix B

Soil Analytical Report





CERTIFICATE OF ANALYSIS

Alliance Environmental Attn: Mr. Jacob Butterworth 100 Jefferson Boulevard Suite 220 Warwick, RI 02888

Date Received: 5/23/07 Date Reported: 5/30/07 P.O. #: 1418

Work Order #: 0705-08282

DESCRIPTION: PROJECT# 1418 CARRINGTON ST.

Subject sample(s) has/have been analyzed by our Warwick, R.I. laboratory with the attached results.

Reference: All parameters were analyzed by U.S. EPA approved methodologies and all NELAC

requirements were met. The specific methodologies are listed in the methods column

of the Certificate Of Analysis.

Data qualifiers (if present) are explained in full at the end of a given sample's analytical results.

Certification #: RI-033, MA-RI015, CT-PH-0508, ME-RI015

NH-253700 A & B, USDA S-41844, NY-11726

If you have any questions regarding this work, or if we may be of further assistance, please contact our customer service department.

Approped by:

Mike Hebin Data Reporting

enc: Chain of Custody

41 Illinois Avenue, Warwick, RI 02888 Phone: 401.737.8500 Fax: 401.738.1970



131 Coolidge Street, Suite 105, Hudson, MA 01749 Phone: 978.568.0041 Fax: 978.568.0078 R.I. Analytical Laboratories, Inc. CERTIFICATE OF ANALYSIS

Alliance Environmental Date Received: 5/23/07 Work Order #: 0705-08282

Extraction date

Approved by:

5/23/07

SW846 3545

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Page 2 of 2

	 -				1 11		,
Sample # 001 SAMPLE DESCRIPTION: SAMPLE TYPE: GRAB	TP-103 (9)	SAMPL	E DATE/TIME:	5/22/2007		
PARAMETER		SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
TPH TPH GC/FID Moisture Extraction date		65 10 Extracted	11	mg/kg dry %	SW846 8100M SM2540 G. SW846 3545	5/29/07 5/23/07 5/23/07	CDC RAS EOO
Sample # 002 SAMPLE DESCRIPTION: SAMPLE TYPE: GRAB	TP-106 (9')	SAMPL	E DATE/TIME:	5/22/2007		
PARAMETER		SAMPLE RESULTS	DET. LIMIT	UNITS	METHOD	DATE ANALYZED	ANALYST
TPH							
TPH GC/FID Moisture Extraction data		350 32	15	mg/kg dry %	SW846 8100M SM2540 G.	5/29/07 5/23/07	CDC RAS

Extracted

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5/22/07			103 (91)			G	١G	143	2	X										<u> </u>		 		_			_
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Container Type	es: P=Polv. G	=Glass, AG=An	iber Glass M	/=Vial_St=Steri	lo Drace	notic:	o Cod		1_61		1115	11. 41					19	<u>v</u>		_	Vorko	rder N	10: Ž	<u>`</u>		1828	刁
Matrix Codes:	GW=Groundw	ater, SW=Surfa	ce Water, W	W=Wastewater	le <u>Preser</u> , DW=Drinking W	ater, S	=Soll, S	<u>çs,</u> NF SI=Sìu	r≕ivoni dge. A	e, N=1 =Air. E	tNO₃, B≂Bull	H=H NSoll	CI, S= d. O=	H ₂ SC	04, SI	∃=Na(OH, S	B=Na	HSO.	4, M=	MeOl	1, T=1	Va₂S₂	O3, Z=	ZnOA	c, I=1	Ce
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